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Impact of physical distancing measures due to COVID-19 pandemic in England on childhood vaccination counts up to week 39, 2020 and vaccine coverage up to August 2020

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Main points

This report summarises vaccination counts updated weekly from The Phoenix Partnership (TPP) GP IT system supplier and monthly vaccine coverage data from all GP IT suppliers.

Vaccination counts for the first dose of MMR in children aged 12 to 18 months and first dose of Hexavalent (DTaP/IPV/Hib/HepB) in children aged 6 months fell at the time of introduction of physical distancing measures in March 2020 (week 13) compared to the same period in 2019. This was followed by a rise from weeks 16 onwards which has stabilised and is comparable to vaccination counts prior to the COVID-19 pandemic.

The initial decrease in vaccination counts is likely to be associated with COVID-19 messaging about staying home which could have overwhelmed the messaging that the routine immunisation programme was to continue and with GPs rescheduling appointments in the initial weeks to ensure social distancing measures were maintained within GP practices. The data presented are from one of the largest GP IT supplier (TPP) and therefore do not represent data for all of England; therefore, this data may not reflect regional and local variation.

Hexavalent vaccine coverage extracted on ImmForm for infants that turned 8 weeks at or after the time when social distancing measures were evaluated continue to follow similar trends to and are comparable with coverage estimates for the same target age group during 2019 and early 2020. Likewise, vaccine coverage estimates for MMR assessed at 15 months in June, July and August 2020 are comparable to estimates from April and May 2020. However, these data must be viewed with caution as they reflect the initial weeks when social distancing measures were implemented.

As physical distancing measures change throughout the course of the pandemic it is important for GPs to continue offering routine immunisations and where required recovery plans should be put in place to account for the initial drop in vaccination counts observed.

Introduction

In England, childhood immunisations are offered according to the routine immunisation schedule. Childhood vaccine coverage is routinely assessed in quarterly COVER (Cover of vaccination evaluated rapidly) programme reports for children who reached their first, second, or fifth birthday [1]. In addition to the routine quarterly reports, more timely aggregated GP vaccine coverage data on Hexavalent (Diphtheria, Tetanus, Pertussis (whooping cough), Polio, Haemophilus influenzae type b (Hib) and Hepatitis B) and MMR (Measles, Mumps and Rubella) vaccines are collected monthly from 6 and 15 months respectively via ImmForm1, for local areas to use for performance management.

On 23 March 2020 (week 13), physical distancing measures were introduced in England which included school closures, stopping gatherings, non-essential use of public transportation and individuals being advised to work from home [2,3]. Advice from the Joint Committee on Vaccination and Immunisation (JCVI) on routine childhood immunisations stated that children should continue to receive vaccinations according to the national schedule throughout the lockdown [4].

In order to evaluate the early impact of physical distancing measures on the delivery of childhood vaccinations an assessment of aggregated weekly vaccination counts provided by the GP IT supplier The Phoenix Partnership (TPP)2, representing approximately 38% of data for all practices in England for 2020 was compared to 2019 counts. These initially indicated that MMR vaccination counts for children aged 12 to 18 months dropped almost 20% in the first weeks after introduction of physical distancing compared to the same period in 2019. First dose (dose 1) Hexavalent vaccination counts for infants younger than 6 months gradually declined, though not accentuated by the physical distancing [2]. Vaccination counts then increased in weeks 16 and 17 despite physical distancing measures remaining in place [2].

This routine report will summarise vaccination counts for dose 1 Hexavalent and MMR updated weekly from TPP in 2020 compared to 2019 for the age groups stated above. This report will also summarise vaccine coverage extracted in August 2020 for dose 1, 2 and 3 of Hexavalent vaccine at 6 months compared to coverage in 2019 and dose 1 of MMR vaccine at 15 months compared to vaccine coverage from April to June 2020.

¹ ImmForm is the system used by PHE to record vaccine coverage data for some immunisation programmes

² TPP supplies SystmOne which is an electronic patient record used by more than 2,600 primary care practices in the UK

Methods

Monitoring weekly vaccination counts provided by TPP

Aggregated weekly counts of the dose 1 Hexavalent delivered to infants 6 months and younger and dose 1 MMR to children between the ages of 12 and 18 months were provided by TPP for all weeks in 2019 and the first 39 weeks of 2020. Weekly trends in vaccination counts were compared between 2019 and 2020.

Early monitoring vaccine coverage

Routine childhood vaccine coverage is formally assessed at one, 2 and 5 years of age as part of the COVER (Cover of vaccination evaluated rapidly) programme. However, GP practice-level vaccine coverage data, automatically uploaded via participating GP IT suppliers to the ImmForm website on a monthly basis provide an early assessment of vaccine coverage for some of the routine childhood vaccinations. These data are validated and analysed by PHE to check data completeness, to identify and query and anomalous results and describe epidemiological trends. Vaccine coverage is calculated as the number of infants reaching a target age and receiving a vaccine(s) as a proportion of the total number of infants registered at the target age, as described in Table 1.

Data extracted in August 2020 reflect Hexavalent vaccine coverage among infants born in January 2020 and evaluated at 6 months of age, who were first eligible for their primary immunisations during March 2020, at 8 weeks old.

Coverage data for the first dose of MMR (MMR1) at 15 months and 18 months were also extracted. MMR1 coverage at 15 months (only available from 2020/21 financial year) will reflect cohorts that turned 12 months and became eligible for MMR1 when the social distancing measures due to COVID-19 were initiated from June onwards, whereas MMR coverage at 18 months will only reflect the affected cohorts from the September 2020 extract onwards.

Table 1. Vaccine type, dose and age of cohort when data is extracted from ImmForm survey

Vaccine	Dose(s)	Age	Extracts with impacted cohorts
Hexavalent	1,2,3	6 months	August 2020 onwards
MMR	1	15 months	June 2020 onwards
MMR	1	18 months	September 2020 onwards

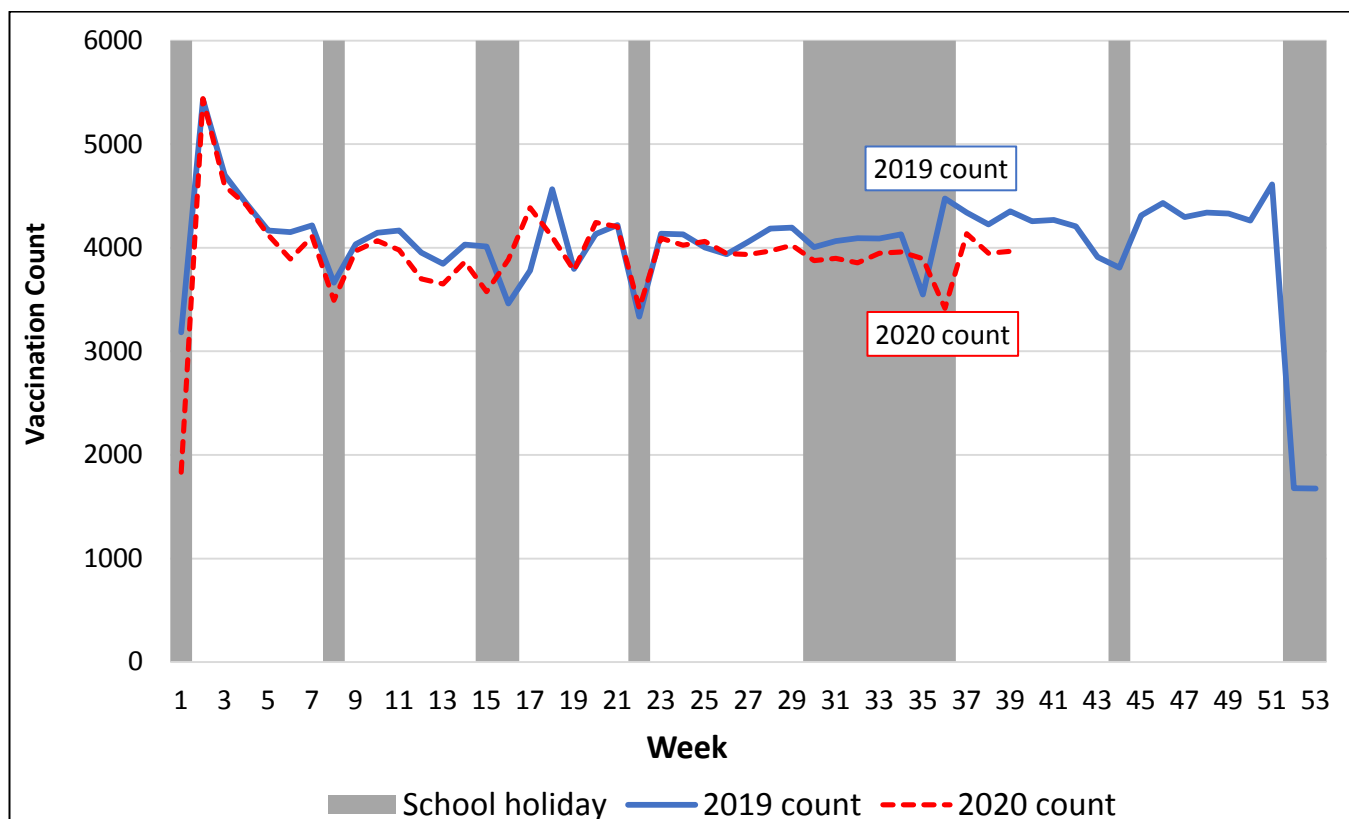
Monthly vaccine coverage trends for Hexavalent at 6 months and MMR at 15 months were assessed overtime from 2019 to 2020 to assess the impact physical distancing measures.

Results

Vaccination counts provided by TPP

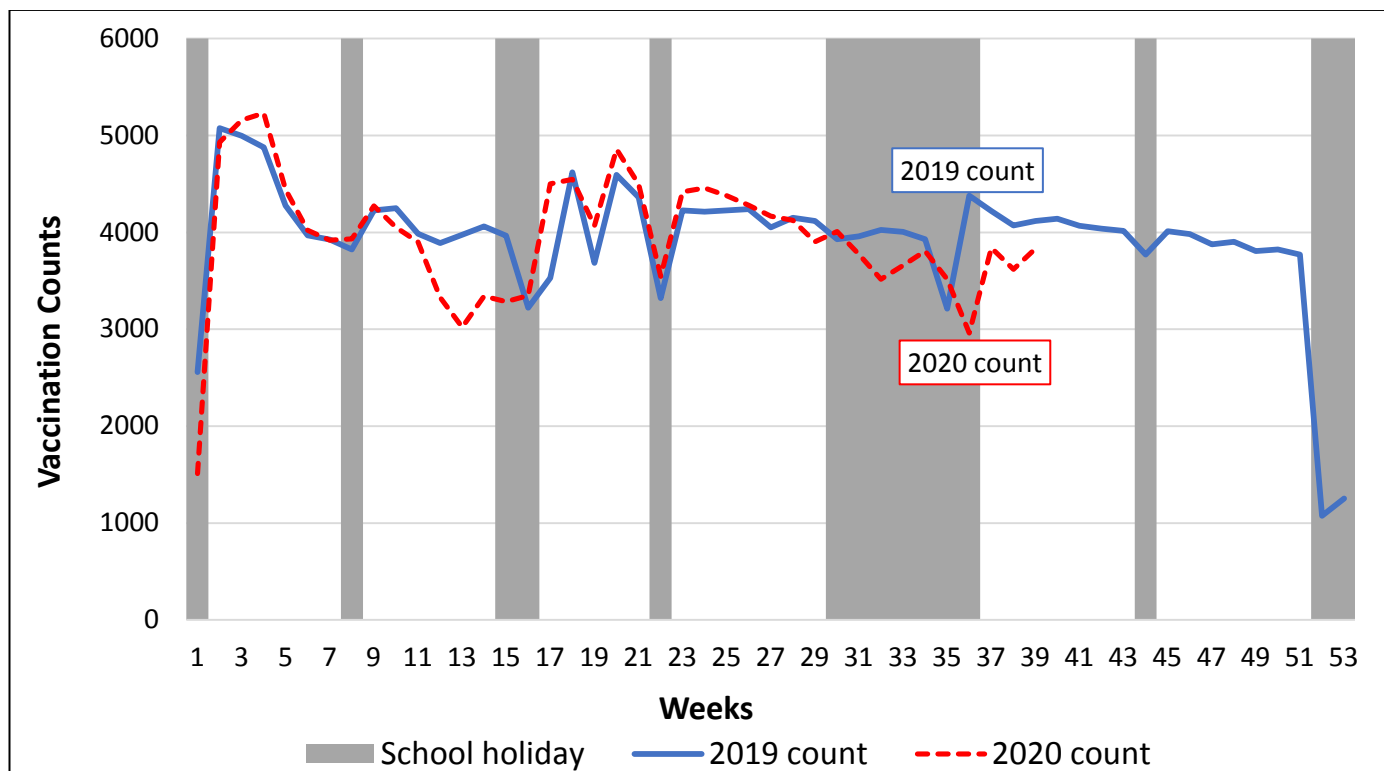
Vaccination counts from TPP general practices in 202 CCGs that were in operation in 2019 and 2020 were extracted. By week 39, a total of 153,659 Hexavalent vaccination counts were extracted in 2020 compared to 159,377 in 2019 (-3.6 percent point change) and 153,965 MMR vaccination counts in 2020 compared to 158,254 in 2019 (-2.8 percent point change).

Figure 1: Dose 1 Hexavalent vaccination counts in infants younger than 6 months in TPP practices in operation in both 2019 and 2020 in England by week in 2019 and 2020*



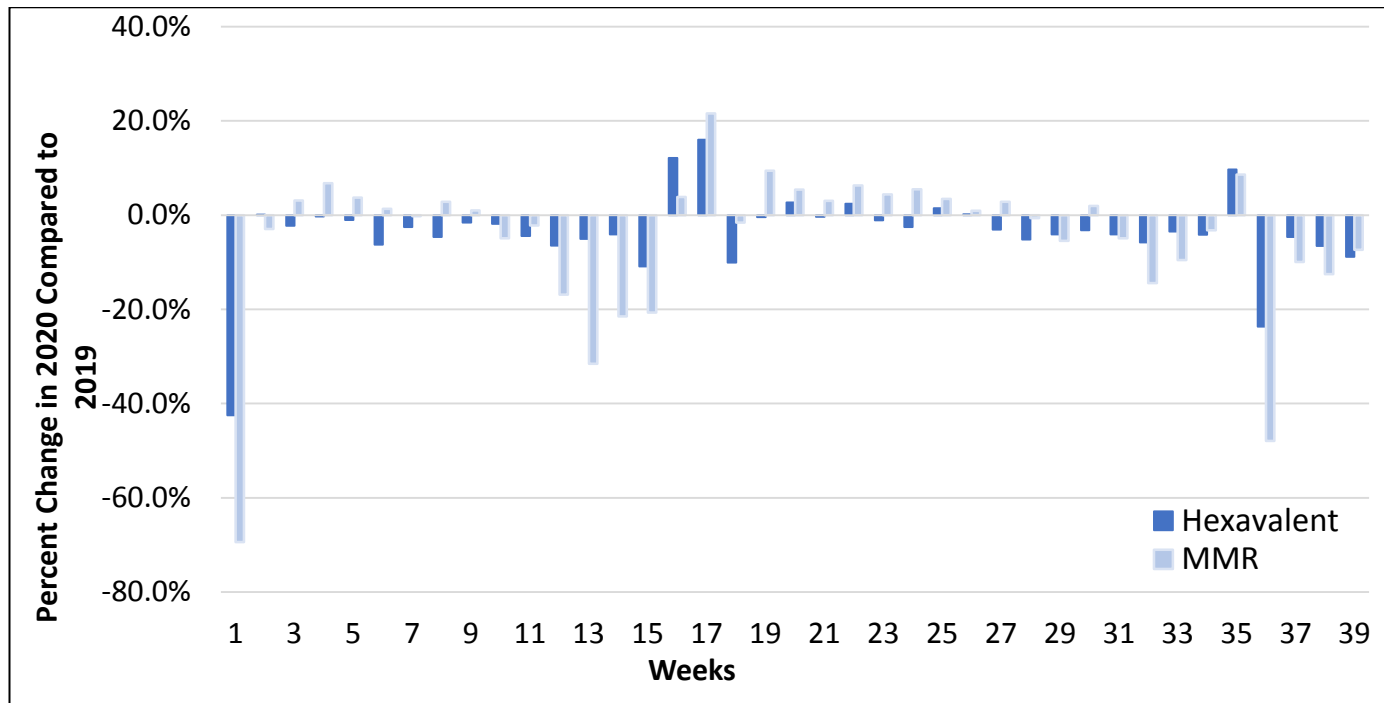
*School holidays (often coinciding with family holidays) for are for the 2020 calendar year. These holidays may vary slightly by year and by local area. School holidays for the 2019/20 academic year were in weeks 43, 52, 53, 1, 8, 15, 16, 19, 22, 30-36. School holidays for the 2020/21 academic year are in weeks 44, 52, 53, 7, 13, 14, 18, 22, 29-35

Figure 2: MMR 1 vaccination counts in infants ages 12 to 18 months in TPP practices open in 2019 and 2020 in England by week in 2019 and 2020



*School holidays for are for the 2020 calendar year. These holidays may vary slightly by year and by local area. School holidays for the 2019/20 academic year were in weeks 43, 52, 53, 1, 8, 15, 16, 19, 22, 30-36. School holidays for the 2020/21 academic year are in weeks 44, 52, 53, 7, 13, 14, 18, 22, 29-35

Figure 3: Percent change in dose 1 Hexavalent (in infants under 6 months) and MMR 1 vaccination (in infants ages 12 to 18 months) counts in 2020 compared to 2019, by week in TPP practices open in 2019 and 2020 in England



Early vaccine coverage assessment in England

Vaccine coverage data for more than 95% of practices were available monthly since January 2019 on ImmForm, except for the August 2020 survey which had data for 92.2% of practices.

National vaccine coverage for completed courses of Hexavalent vaccine were consistent with previous months in 2019. The greatest difference was observed for dose 3 of the Hexavalent vaccine (0.5 percentage points lower in 2020 than in 2019), where infants would have been eligible for a shorter period of time for the vaccine (Figure 4).

MMR vaccine coverage at 15 months from April 2020 onwards indicates small changes in vaccine coverage since April 2020. Coverage from June 2020 onwards (including children that turned 12 months old when the social distancing measures initiated) is comparable to April and May data, with the lowest coverage in June 2020 (Figure 5).

Figure 4: Vaccine coverage for dose 1, 2 and 3 of the Hexavalent vaccine by month in 2019 and 2020. Data from August 2020 onwards will reflect the cohorts impacted by the social distancing measures due to COVID-19

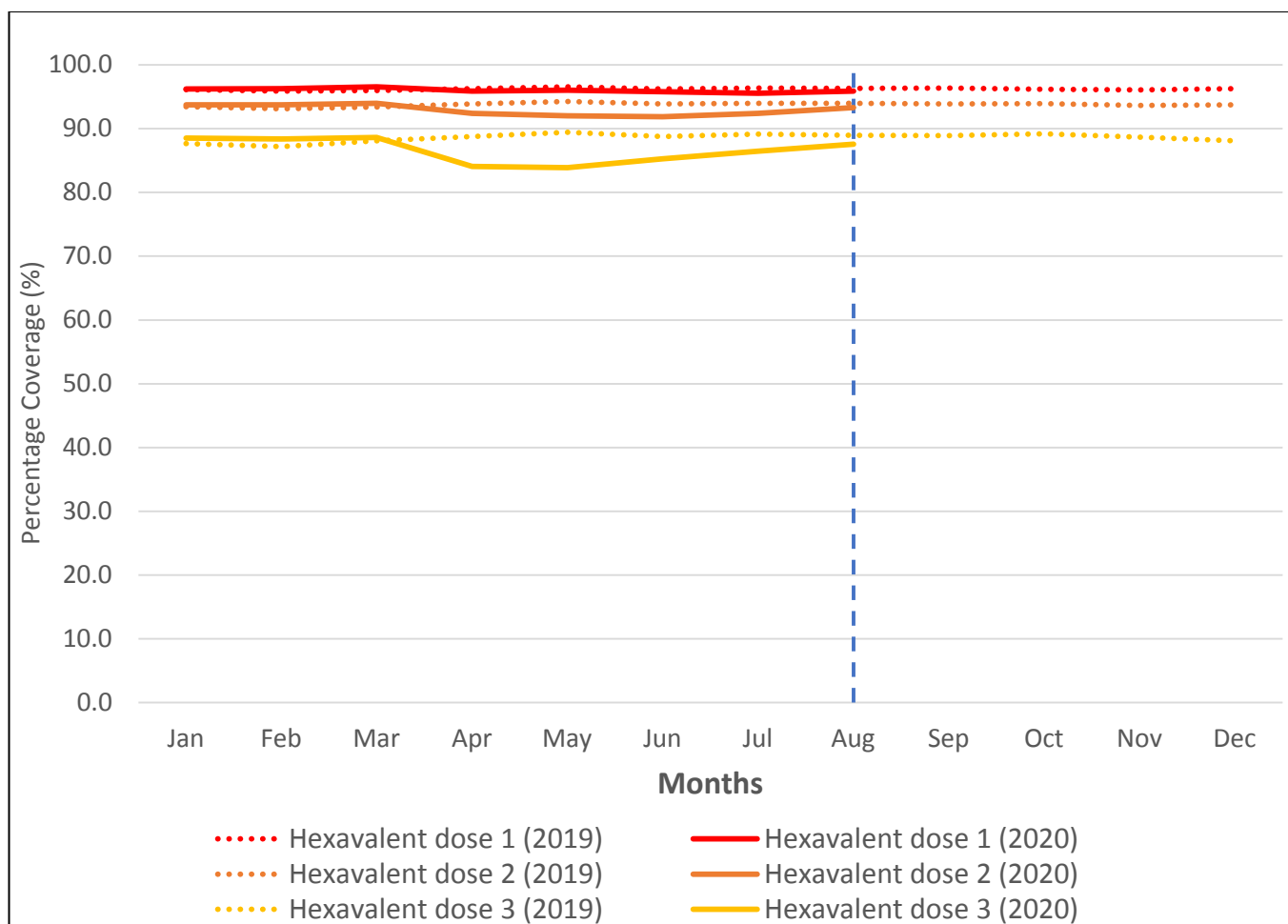
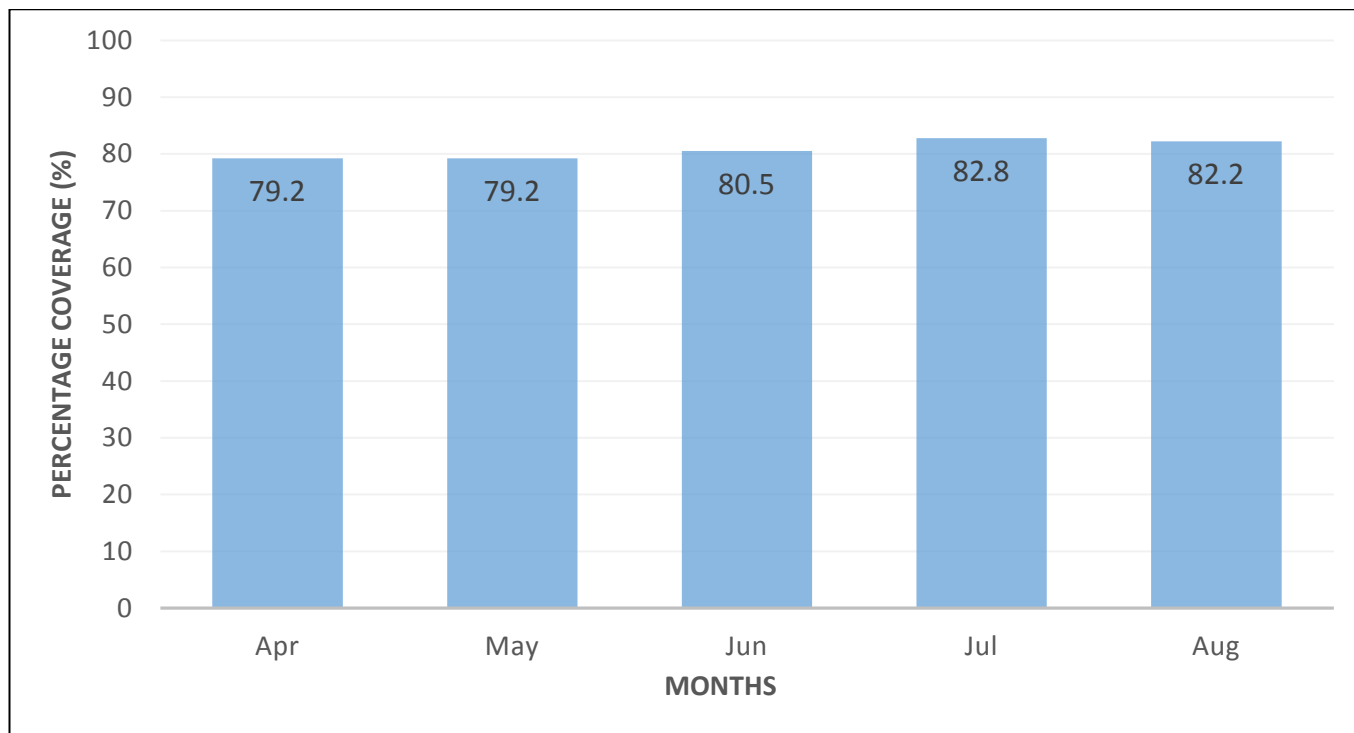


Figure 5: Vaccine coverage for MMR dose 1 at 15 months from April 2020 to August 2020. Data from June 2020 onwards reflect infants potentially impacted by social distancing measures due to COVID-19



Discussion

At the introduction of the physical distancing measures in March 2020 (week 13), vaccination counts for MMR 1 and dose 1 Hexavalent fell compared to 2019. This decrease in vaccination counts may be associated with COVID-19 messaging about staying home initially overwhelming the messaging that the routine immunisation programme was to remain operating as usual [2]. Additionally, anecdotal information indicated that in some areas, to ensure safe and best practice, GPs had to reschedule appointments in the initial weeks to ensure social distancing within GP practices. Vaccination counts for both vaccines began to rise in weeks 16 and 17 and were comparable to 2019 counts, and to counts in 2020 prior to the COVID-19 pandemic, indicating that the initial drop had recovered. However, the overall vaccination counts for dose 1 Hexavalent and MMR 1 vaccines is slightly lower than the 2019 counts. The drop-in vaccination counts may be explained by a slightly smaller cohort or a small decline in coverage [2]. It is also important to note that school holidays and bank holidays occur in different weeks in 2019 and 2020, and therefore can cause weekly differences. The data presented are vaccination counts only from one GP IT supplier (TPP) and coverage estimates cannot be calculated without age-specific denominator data. Additionally, some regions are less represented than others and therefore do not represent data for all of England. These data should therefore be viewed with some caution and will not necessarily reflect vaccination count trends at a local level.

Early assessment of age-specific vaccine coverage allows local areas to assess performance before children reach the age that formal vaccine coverage is assessed. Vaccine coverage for the 3 doses of Hexavalent vaccines from aggregated GP-level data have been collected via the ImmForm platform since 2019. Hexavalent coverage estimates for those infants that turned 8 weeks at or after the time when social distancing measures were implemented (23 March 2020), evaluated in August 2020 at 6 months of age, continue to follow similar trends to and are comparable with coverage estimates for the same target age group during 2019 and early 2020. Likewise, vaccine coverage estimates for MMR assessed at 15 months in June, July and August 2020 are comparable to estimates from April and May 2020. However, these data must be viewed with caution as they reflect the initial weeks when social distancing measures were first implemented.

Future monthly collections will continue to monitor any impact of COVID-19 on early vaccine coverage. Vaccine coverage will vary across the country and local areas can monitor early estimates of coverage in their areas using ImmForm and other data sources to identify areas needing more support.

As physical distancing measures change throughout the course of the pandemic and the risk of other infectious diseases circulating increases it is of utmost importance that GPs

continue offering routine immunisations, check and recall those who have not received a vaccine and, where required, recovery plans should be set in place to address any drop in vaccine coverage observed since the beginning of the lockdown.

References

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